Distribution. *Schoenoplectus pseudoarticulatus* is known from Hainan, China, and also occurs in India. No specimens other than the type were seen, and the distributional information is taken from *Flora Hainanica* (Anonymous, 1977).

5. Schoenoplectus supinus (L.) Palla, Bot. Jahrb. Syst. 10: 299. 1888. Basionym: *Scirpus supinus* L., Sp. Pl. 1: 49. 1753. TYPE: France. Paris: *Hb. Tournefort 5117* (neotype, designated by Raynal, 1976: 145, P-TRF not seen).

5a. Schoenoplectus supinus subsp. **supinus**.

Distribution. *Schoenoplectus supinus* subsp. *supinus* is distributed in Europe, North Africa, Turkey, the Caucasus, southern Siberia, Kazakhstan, Iran, Pakistan, and East Asia, but is not found in China.

Discussion. Subspecies *supinus* is characterized by its larger spikes (5–12 mm) and the conspicuously transversely rugulose nut surface.

5b. Schoenoplectus supinus subsp. **densicorrugatus** (Tang & F. T. Wang) S. Yun Liang & S. R. Zhang, comb. et stat. nov. Basionym: *Scirpus supinus* var. *densicorrugatus* Tang & F. T. Wang, Fl. Reipubl. Popularis Sin. 11: 223. 1961. TYPE: China. Xinjiang: s. loc., 7 Sep. 1956, *R. C. Ching 786* (holotype, PE).

Distribution. *Schoenoplectus supinus* subsp. *densicorrugatus* is only known from Xinjiang, China.

Discussion. There are several infraspecific taxa within *Schoenoplectus supinus*, but only two occur in China: *S. supinus* subsp. *lateriflorus* (J. F. Gmel.) Soják and *S. supinus* subsp. *densicorrugatus*. The latter was originally described at varietal rank, differing from subspecies *supinus* by its smaller spikes (3–6 mm) and more densely and finely rugulose nut surface. The rank of subspecies is applied here in order to be consistent with taxonomic precedence otherwise recognized within the species.

Specimens examined. CHINA. **Xinjiang:** s. loc., *R. C. Ching 786* (PE).

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Two New Species of *Saussurea* (Asteraceae) from the Qinghai-Xizang Plateau, China

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ABSTRACT. *Saussurea sugongii* S. W. Liu & T. N. Ho and *S. bartholomewii* S. W. Liu & T. N. Ho (Asteraceae) are described from the Qinghai-Xizang Plateau, China. The two new species are illustrated and compared with their closest relatives.

Key words: Asteraceae, China, IUCN Red List, Qinghai-Xizang Plateau, *Saussurea*.

Saussurea DC., with about 400 species, is widely distributed in the temperate zones of Europe, Asia, and North America. The highest diversity of species exists in China, where 264 species are found (Shih & Jin, 1999). Throughout its geographic range, *Saussurea* may be found in various habitats to altitudes of 5700 m. Four botanical expeditions to the Qinghai-Xizang Plateau in China included two in southwestern Qinghai Province in 1993 and 1996 and two in the Kunlun Mountains in 1987 and 1988. These expeditions yielded two taxa quite different from previously described species of *Saussurea*. They are presented here as new species and are named after the collectors of the type specimens, Bruce Bartholomew and Su-gong Wu, in appreciation of their contributions to taxonomy and floristics in the Qinghai-Xizang Plateau.

1. **Saussurea bartholomewii** S. W. Liu & T. N. Ho, sp. nov. TYPE: China. Qinghai: Yushu, Jianxigou forestry station, 32°8′N, 97°2′E, 3620 m, in *Picea* forests, 28 Aug. 1996, *Ho Ting-nong, B. Bartholomew & M. G. Gilbert 2583* (holotype, HNWP; isotypes, CAS, GH). Figure 1A–D.

Haec species *Saussureae comptae* Franch. affinis, sed ab ea foliis obovato-lanceolatis vel oblanceolatis supra glanduloso-pubescentibus subtus sparse arachnoideis, illis medianis lyratis segmentis 1- vel 2-binatis, illis superis integris vel dentatis, calathiis numerosis, involucro tubuloso-campanulato, phyllariis extimis et medianis ovatis vel ovato-oblongis apice obtuso-rotundatis atque pappo biseriato setis fere aequilongis valde differt.

Perennials, 7–9 cm tall; rhizomes short; stems erect, striate, sparsely white arachnoid and glandular-pubescent, branched, caudex covered with fibrous remains of old leaf bases. Leaves cauline; petioles 3–4 cm, slender, sparsely white arachnoid and glandular-pubescent, base slightly decurrent; leaf blade obovate-lanceolate to oblanceolate, adaxially green, glandular-pubescent, abaxially glaucous, sparsely white arachnoid, penniveined, midvein prominent; basal leaves withered at anthesis; median leaf blade lyrate, 4–6 × 1.8–2.3 cm, terminal segment large, apex obtuse, margin dentate, the lateral ones 1 or 2 pairs, triangular, apex acute; upper leaf blade 2–5 × 0.4–2 cm, margin entire or dentate. Capitula many, cymose-corymbose at ends of stem and branches; peduncles 5–12 mm, having the same indumentum as the stems; involucre tubular-campanulate, 12–15 × 7–9 mm; involucral bracts arranged in 5 or 6 rows; exterior and median bracts ovate or ovate-oblong, 3–10 mm, apex obtuse-rounded and white lanate, abaxially almost glabrous, interior bracts lanceolate, to 15 mm, apex obtuse or acute and densely tomentose, abaxially white villose on the upper half; receptacular palea white, membranous, subulate, ca. 1.5 mm. Florets tubular, 12–13 mm, blue-purple, tube ca. 7 mm; anther tails white floccose-lanate. Achenes (immature) cylindric, ca. 3 mm, glabrous, punctate, 4-ribbed, apex coronate; pappus biseriate; interior setae 10–12 mm, pale brown or white, plumose, connate at base in a ring; exterior setae white, scabrous, deciduous, most setae as long as interior ones but with a few shorter.

Distribution and habitat. *Saussurea bartholomewii* is known only from the type collection. It is endemic to Yushu Xian of Qinghai Province, China, where it occurs in spruce forests (*Picea* A. Dietr.) at elevations ca. 3620 m.

IUCN Red List category. Due to the rarity and limited distribution of *Saussurea bartholomewii*, this species is assessed here as Endangered (EN) according to the IUCN Red List criteria EN Blab(i,ii,iii) (IUCN, 2001).

Etymology. This new species is named after Bruce Bartholomew, a taxonomist and phytogeographer in the Department of Botany, California Academy of Sciences.

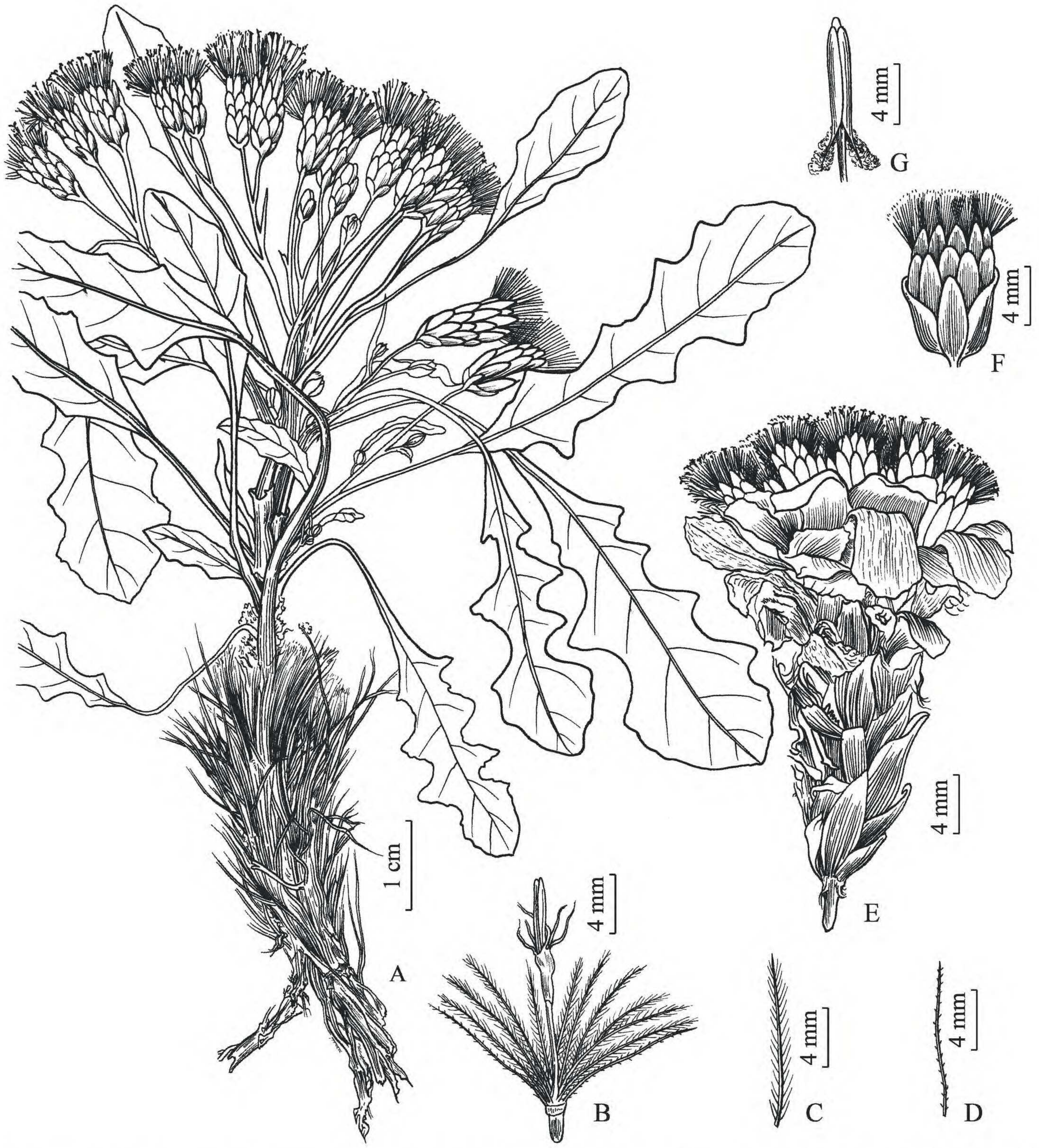

Figure 1. A–D. *Saussurea bartholomewii* S. W. Liu & T. N. Ho. (Drawn from the holotype *T. N. Ho et al. 2583*, HNWP). —A. Fertile plant. —B. Floret. —C. Inner seta of pappus. —D. Outer seta of pappus. E–G. *Saussurea sugongii* S. W. Liu & T. N. Ho. (Drawn from the holotype *S. G. Wu 2725*, KUN). —E. Fertile culm. —F. Capitulum. —G. Anther.

Relationships. *Saussurea bartholomewii* is closely related to *S. compta* Franch., but differs by the leaves that are obovate-lanceolate to oblanceolate, adaxially glandular-pubescent, and abaxially sparsely white arachnoid and the median leaves that are lyrate with lateral segments in one or two pairs. The new species is also distinguished in having upper leaves that are entire or dentate, numerous capitula, a tubular-campanulate involucre, ovate or ovate-oblong exterior and median bracts with an obtuse-rounded apex, floccose-lanate anther tails, a biseriate pappus, and exterior setae that are mostly as long as the interior ones. *Saussurea compta* has leaves that are abaxially scabrous, sparsely hispid, densely white tomentose, and adaxially green, with the basal and lower stem leaves withered at anthesis; shortly petiolate middle stem leaves with a narrowly elliptic and pinnatisect leaf blade; lateral segments in two or three pairs, oblong, lanceolate, or narrowly triangular, with the blade margin entire or 1-lobed only at one side or 1-lobed on each side, and the apex acute to obtuse; caudate terminal segments; upper stem leaves that are